

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/BR02/00182

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : F16D 69/00  
US CL : 188/71.6, 250R, 250G, 264R

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 188/71.6, 250R, 250G, 264R

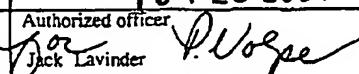
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EAST

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,109,399 A (CRAWFORD et al.) 29 August 2000 (29.08.2000), whole document, figure7.	1
X	GB 2 110 327 A (HOWARTH) 15 June 1983 (15.06.1983), figure 3.	1
X	FR 2 640 337 A1 (RIGAL) 15 June 1990 (15.06.1990), see abstract and figures 4 and 5.	1
X	JP 63 167134 A (HITACHI CHEM. Co. LTD.) 11 July 1988 (11.07.1988), see abstract and figure 2.	1
X	JP 62 209235 A (OTA) 14 September 1987 (14.09.1987), abstract and figure 3.	1

<input type="checkbox"/>	Further documents are listed in the continuation of Box C.	<input type="checkbox"/>	See patent family annex.
*	Special categories of cited documents:		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search  08 May 2003 (08.05.2003)	Date of mailing of the international search report  19 FEB 2004
Name and mailing address of the ISA/US  Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer   Jack Lavinder Telephone No. 703-308-1113

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